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HUNTERIAN ORATION

DELIVERED ON TUESDAY, FEBRUARY 14, 1899

AT THE ROYAL COLLEGE OF SURGEONS
OF ENGLAND

IN PRESENCE OF

HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G.

BY

SIR WILLIAM MAC CORMAC, BART. K.C.V.O.

SURGEON IN ORDINARY TO HIS ROYAL HIGHNESS THE PRINCE OF WALES,
KNIGHT OF GRACE, ORDER OF ST. JOHN OF JERUSALEM,
PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

CONSULTING SURGEON AND EMERITUS LECTURER ON CLINICAL SURGERY, ST. THOMAS'S HOSPITAL,
CONSULTING SURGEON QUEEN CHARLOTTE'S HOSPITAL,
FRENCH HOSPITAL, ITALIAN HOSPITAL, BRITISH LYING-IN HOSPITAL,
AND ROYAL HOSPITAL, BELFAST.

HON. MEMBER OF THE ACADEMIES OF MEDICINE OF PARIS, BRUSSELS, AND ROME, AND OF
THE IMPERIAL ACADEMY OF MILITARY MEDICINE, ST. PETERSBURG; HON. FELLOW
OF THE AMERICAN SURGICAL ASSOCIATION; HON. MEMBER OF THE MEDICAL
SOCIETIES OF NEW YORK AND MUNICH; OFFICIER DE LA LÉGION
D'HONNEUR; COMMANDER OF THE MEDJIDIE, CROWN OF
ITALY, TAKOVA, DANNEBROG, AND MILITARY MERIT
OF BAVARIA; KNIGHT OF THE CROWN ORDER
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YOUR ROYAL HIGHNESS,

MY LORDS AND GENTLEMEN,

In accordance with the terms of a deed establishing the Hunterian Oration, we celebrate to-day John Hunter's name and fame. Born on the 14th of February in the year 1728 at Long Calderwood, a small estate his father farmed, some eight miles from Glasgow, he died on October 16th, 1793, in his sixty-fifth year, celebrated alike as a great surgeon, a profound biologist, and a man of genius.

It is fitting that this College, the heir to Hunter's great collection, should take care for his memory, and one way in which this is done, however inadequately, is by means of the Hunterian Oration, delivered in this Theatre in alternate years. Here, in view of this noble presentment of Hunter by the foremost painter of his time, the Orator is called upon to praise its foremost surgeon. Hunter was a bad sitter, and it

was almost by an accident that Reynolds obtained the opportunity to paint this, one of his finest portraits.

In the background are indicated the bones of O'Brien the Giant, whom Hunter affectionately calls his "tall man," a preparation showing the vessels of the heart suggestive of his work on Aneurism, and three volumes of his manuscript notes.

As we look at the picture, painted in 1785, when Hunter was fifty-seven years old, we perceive him in deep reverie, in one of those waking dreams to which he refers in his lectures. He has paused from writing in order to think out some problem, and, as he often said, it was a delight to him to think. As we dwell upon the features we cannot doubt that a sudden inspiration has flashed upon and gradually pervaded his mind, some great scientific truth or generalisation which he has grasped and is pondering with intense satisfaction.

Those eyes, full of the keenest intelligence, seem in eager quest of something far beyond the visible tokens of his work. We may imagine Hunter trying, perchance, to solve the hidden mystery of life, or seeking to pierce the veil which hides from us the great unknown beyond.

Buckle calls Hunter a genius, whose only fault was an occasional obscurity in language and in thought.

"It sometimes seems," he writes in his History of Civilisation, "as if Hunter's understanding were troubled by the grandeur of its own conceptions, and doubted the path it ought to take. Still his powers were so extraordinary, that among the great masters of Organic Science he belongs to the same rank as Aristotle, Harvey, and Bichat, and is somewhat superior to Haller and Cuvier."

What, then, was the manner of man whom Buckle thus characterises? I would desire to present him to you as a yet surviving influence, to recall his very words, and to show him to you as he lived.

To appreciate, or even fully to comprehend, the labours of Hunter, one must strive to judge them from the standpoint of his time, for in this way only can we form a just conception of their splendid superiority.

On Hunter's early life and the many moot points it involves—his preliminary education or the want of it, whether he was for a time a carpenter by trade, why he was not sent to learn the Humanities at Glasgow College like his brothers, or why in later life he spent some time at Oxford University * without any apparent

* At the outset of his career in London, William Hunter desired that his brother John should be trained as a physician, and sent him to Oxford to obtain the necessary classical education, but during the short period he spent there he found himself quite unable to study

appreciation of the academic learning there offered to him—I do not purpose to dwell.

John Hunter was the youngest child of a family of ten, and the spoiled son of his mother. As a boy his pleasure was to ramble in the quiet woodlands, observe the ways of the living things he found there, collect the eggs of birds and compare them together. "I wanted to know," he tells us, "all about the clouds, and the grasses, and why the leaves change colour in the autumn; I watched the ants, bees, birds, tadpoles, and caddis-worms; I pestered people with questions about what nobody knew or cared anything about."

Hunter's scientific career dates from his arrival in London in 1748, where, when twenty years of age, he joined his brother William's school as an ill-educated youth, new to all the amenities of life, brusque in manner and negligent in appearance, yet with a keen sense of physical enjoyment. As a pupil he showed a marvellous aptitude for anatomy, and soon became a

Latin and Greek, and spoke afterwards rather contemptuously of the ancient learning.

One might refer, in illustration of this, to what John Hunter remarked on one occasion of Jessé Foot, his spiteful biographer, who combines a very hostile criticism of everything Hunter said or did with acrid personal invective: "Jessé Foot accuses me of not knowing the dead languages, but I could teach him that on the dead body which he never knew in any language, dead or living."

successful teacher of it, but he always remained a learner in that great book of nature which was ever open before him, and whose pages, until he died forty-five years later, he never ceased to turn, interpreting aright many of its obscurest passages.

It was thus that Hunter started on a career destined to mark deeply the history of his time. From the moment he began to work his industry was unwearied, his patience extraordinary, and his capacity for unflagging effort so sustained that it brought him step by step to a position which has earned for him the praise and admiration of his successors.

In 1759, undermined in health by ten years of incessant toil, he contracted an attack of pneumonia, and his weakened constitution was threatened with phthisis. Recommended to take rest, he only changed one sphere of activity for another, and having obtained through his brother's influence an appointment as surgeon in the army, he sailed (1761) with Keppel for Belleisle, and afterwards accompanied the Expedition into Portugal. It was there that he studied the phases of inflammation and the treatment of gunshot wounds.

When he returned to London, after peace was proclaimed (1763), with nothing but his half-pay to provide the wherewithal to live upon, and nothing but his genius to trust to for advancement, Hunter's

life became an extremely arduous one. He was able to do with little sleep, and from four or five in the morning until the breakfast hour he dissected, then he saw patients, visited the hospital, pursued his researches, worked at his note-books, and pondered the bearing of his observations till midnight. He was elected a Fellow of the Royal Society when thirty-nine, a year later became surgeon to St. George's Hospital, and in 1776 was appointed surgeon extraordinary to the King.

In 1786 he was appointed Deputy Surgeon-General in the army, and three years later became Surgeon-General. He also published his work on Venereal Diseases in 1786, and the following year received the Copley Medal from the Royal Society on account of many valuable papers. His great work on the "Blood and Inflammation," however, still remained unfinished after thirty years of labour bestowed upon it, and was only published after his death.

At fifty years of age Hunter had reached the zenith of his surgical career, having done more to improve the science of surgery than all the other surgeons of Europe had done before him, and when Pott died, he became the chief surgical authority in London; his opinion was highly valued in all difficult cases, and he acquired a lucrative practice. There

is no doubt he was an admirable clinical teacher and a courageous operator, and although his systematic lectures on surgery were marred by a faulty delivery and occasional obscurity of style, they attracted all those who afterwards attained distinction amongst their contemporaries.

Cline was twenty-four years of age when he attended Hunter's first course of lectures, and they must have deeply impressed him, for he says that "although well acquainted with the opinions of the most distinguished surgeons then practising in London, he found Mr. Hunter's lectures so far superior to anything he had conceived or heard before that there seemed no comparison between the great mind of the man who delivered them and all the individuals, whether ancient or modern, who had gone before him."

We only possess an account of these lectures on the principles of surgery at second hand, but even these somewhat fragmentary records teem with observation, are full of suggestion, and enlightened by many applications of physiological knowledge. Doubtless some of the explanations are faulty and some of the deductions incorrect, but Hunter is throughout transparently anxious to discover the truth, and his search for it is as unbiased as it is keen.

Abroad, the French School, then in the highest repute, received with acclamation a translation of Hunter's works. M. Royer-Collard wrote: "It is more than a book that has appeared, it is a scientific event, a discovery almost. We may now contemplate at our leisure one of the greatest monuments which the genius of science has created in modern times, we may study and learn to know every part of this great work, almost as new for us now, after fifty years have passed, as it was on the day of its birth."

Hunter was deficient in what we are pleased to call general culture, and doubtless he suffered in consequence. He read but little, and many of his discoveries had been anticipated by others, but when this was brought to his knowledge he abandoned any claim he might have advanced. It appeared to him of small consequence by whom a discovery was made if only it proved the stepping-stone to a higher and more complete knowledge. He was no mere collector of facts in order simply to augment their number. He thought too much attention could not be paid to facts so long as they helped to establish principles, but that too many facts crowded the memory without advantage. He was not only a constant observer, but he verified his observations, and, indeed, no amount of trouble was too great for him to take. He knew well, however, that

the mere accumulation of facts is valueless until the knowledge thus acquired is co-ordinated, and in the capacity for generalisation Hunter was pre-eminent.

His manner of expressing himself, both in his written works and in his lectures, left much to be desired; his spelling was defective and his command of language uncertain, nor was his reasoning always logical. Yet it is an idle task to speculate on what Hunter would have been equipped with what is called a general education. In some respects it could scarcely have made him a greater man, for it could in no wise have increased his immense laboriousness, his passion for research, his genius for induction, or his gifts as a collector. He had a great power of estimating what was worth doing, and how best to do it; his descriptions are graphic, and as an expositor of what he had to tell he is often unsurpassed.

In 1789 he was attacked by severe illness, and until his death four years later his life proved a painful one. Constant work and insufficient sleep doubtless shortened his days. The paroxysms of Angina from which he suffered became more frequent and serious, yet, nothing daunted, and although conscious his end was near at hand, he worked on until the last.

His death, sudden and tragic in its circumstances,

happened in St. George's Hospital whilst he was demanding from somewhat hostile colleagues what he regarded as a just concession to his pupils.

In the first instance Hunter's work was biological, his range including both the animal and vegetable kingdoms, and the mineral kingdom as well, and to illustrate his investigations he became a collector. But he was chiefly and finally a surgeon, and to the development of surgery he brought all the knowledge and all the training which he had acquired in other branches of science. It is because of this that he was able to transform surgery from a barren account of isolated cases into a calling founded on anatomical, physiological, and pathological knowledge, not of man alone, but of the entire animal world. He carries us beyond mere handicraft and detail into the region of general principles and law. The surgery of the Middle Ages was a trade, Ambroise Paré and Jean Louis Petit converted it into an art, John Hunter elevated it to the rank of a science.

Hunter's life and work inspired his successors with the spirit of observation, investigation, and experiment. We see this exemplified in his great followers, Cline, Abernethy, Astley Cooper, Travers, Green, Brodie, Lawrence, and others since their time. They have been makers of English surgery, and each in turn has

contributed much to raise it to that high standard to which it has attained.

And now I may refer in detail, yet of necessity very shortly, to some small part of Hunter's work in illustration of what I have just said. I shall first allude to his observations on Animal Heat, which are of the greatest interest, especially when we remember the imperfect quality of the instrumental aid at his disposal; then say some words as to his opinions upon Injuries of the Head, and his never-to-be-forgotten work on Aneurism; I shall briefly review his study of Venereal Diseases; and, lastly, notice his great work on Inflammation and Gunshot Wounds—the last a branch of surgery which has always attracted me. Nor could the account be considered complete without a reference to the past and present state of our great Museum.

Animal Heat.

Animal Heat was a subject in which Hunter was much interested. He speaks of it at length in the treatises on Inflammation and on the Animal Œconomy, and he contributed papers upon the subject to the Philosophical Transactions, and nowhere, probably, are his methods, and the advances he made, shown to greater advantage than in his experiments and observations on the heat-producing power of animals.

Just a century earlier, Harvey, his great predecessor, who equalled John Hunter in ability and excelled him in logical exposition, dealt with the same subject in the seventy-first chapter of his treatise on Development. No important advance had been made in the interval, and one may compare one essay with the other, bearing in mind that Harvey was already stricken in years when he wrote the "Calidum Innatum," whilst Hunter was but thirty-eight when he performed his experiments, although they were not given to the world for twenty years after. Harvey throughout his essay is trammelled by his historical knowledge. He repeatedly quotes Aristotle, and arrives at the conclusion that the heat of the blood of animals is neither fire nor derived from fire. Further than this he does not go, for to him heat is a principle inherent in the blood, and he loses himself in metaphysical speculation as to whether the blood is not the soul or even the life itself.

Hunter starts in a different manner. The lapse of a hundred years had made the thermometer familiar to men of science. Black's work, published in 1757, was probably known to Hunter when he began his experiments, whilst the treatises of Priestley and Lavoisier saw the light before his essay was finally prepared for publication. Hunter had therefore a knowledge of

respiration and of the function of the lungs, which was unknown to Harvey.

No fact is more interesting than the uniform bodily temperature of man. It is the same at the Equator and in the Arctic Circle, in the Negro and the Esquimaux. In all warm-blooded animals, indeed, it varies in a quite insignificant degree.

Explanations of the manner of heat production in animals date from the foundation of medicine. The ancients thought that there must be an internal furnace, Plato believed that the blood boiled in the heart, and it was not till the last century that pure speculation was replaced by experiment. Lavoisier first indicated the right explanation when he regarded respiration as inducing a combustion within the tissues, and by degrees our present knowledge was acquired that heat is evolved in every tissue and organ of the body, mainly by metabolism of the protoplasm. Rubner has very recently determined the exact relation of heat production with metabolism, having proved that the heat evolved by the combustion of a given quantity of food, as shown by the calorimeter, is precisely equivalent to the amount of heat production in an animal fed with a similar quantity of food.

Hunter's account is involved and difficult to understand. He discusses whether heat is matter or only a

property of matter, and supposes heat and cold to be opposite principles: he has shown that the body can generate heat and has also a cold-producing power; and he is inclined to believe that there is a principal source of heat in the body, although he does not indicate its locality.

Hunter considered animal heat must depend on some unknown force like that which maintains vitality, on a decomposition going on in the body and in pretty regular progression, though not on fermentation or friction, two of the explanations current at the time, and his opinion therefore closely approaches the present one as to the present influence of metabolism. He pointed out the essential difference between the so-called warm- and cold-blooded animals. The temperature is constant in the first, and within a wide range independent of external influences, while in the latter there is much less capacity for resistance, and the temperature varies with that of the surrounding medium.

Donders, in 1845, again called attention to these differences, and named the two groups those with a constant and those with a varying temperature, but in this he had been long anticipated by Hunter, whose observations and experiments on the heat of bees and wasps, of animals asleep and awake, and their temperature at different seasons, were endless. He ascertained

that they could maintain heat while placed in a cold medium, and that they possess a cooling power in an atmosphere much higher than the standard temperature of the body, a phenomenon which he attributed in part to evaporation but chiefly to a power inherent in the organism of destroying heat.

To discover the nature of heat production during the state of inflammation Hunter made many thermometric experiments in healthy and diseased parts in all kinds of animals, determining both surface temperatures and those of the interior of the body. He studied for years the temperature of bats and hedgehogs, both asleep and awake, starving and full of food. He noticed the capacity for resisting cold, up to freezing-point at least, possessed by fishes, and the lower temperature of the addled egg, as compared with the living one, under the sitting hen. In his letters to his favourite pupil, Edward Jenner, he repeatedly refers to the subject. He wants to learn from him the temperature of bats and hedgehogs in summer and winter. He is especially interested in the hibernation of the hedgehog, and is constantly asking Jenner to send him supplies of the animal in order to ascertain its temperature at different seasons of the year. He also writes to him, "Have you any large trees of different kinds that you can make free with? If you have, I

will put you on a set of experiments with regard to the heat of vegetables."

Even in a letter to Jenner condoling with him on a disappointment in love, Hunter says, "but let her go"—he refers, I suppose, to the lady—"never mind her, I shall employ you with hedgehogs."

Injuries of the Head.

Hunter's opinions on fracture of the skull and on trephining in injuries of the head typify the clear grasp he took of every surgical subject. They were not only far in advance of the time, but would find a very general acceptance in the present day.

"Depression of the external table," he tells us, "may exist and yet the inner not be hurt. In cases of fissure only it may admit of dispute whether we are always to trepan. If there be no symptoms of injured brain, then it certainly will not be necessary, nor even always when attended by symptoms of injured brain, for the injury may only arise from concussion. However, as we cannot tell for certain whether the symptoms arise from concussion, compression, or extravasation of blood, it may be more advisable to trepan, as the operation can do no harm. In cases of depression of the outer table it would also be unnecessary to trepan, but it

will be impossible to say certainly it is a case of this kind, for though there may be no symptoms of injured brain there may be depression of the inner table, which may do the mischief afterwards."

"In young people a fracture with depression may cause no bad symptoms at the time, but as the patient grows up bad symptoms may arise. In all cases of violence attended with compression the trepan is absolutely necessary, although we cannot promise relief from the operation. When the compression is by bone, the situation known, and a proper one for trepanning, there is no difficulty; but when the compression is by blood or pus, and there are no external marks of violence, it is more puzzling. However, rather than let a person die one would trepan somewhere or other, and if this did not answer one would not stop there, for I have seen collections of matter on the opposite side to that on which the blow was inflicted."

He recognised the greatly increased risk to life when the *dura mater* was opened, and the greater gravity of a collection of matter or blood between the *dura* and the brain as compared with one between the skull and *dura*.

"The cases all died," he says, "when the *dura mater* was incised. This happened to Mr. Cooper, whose *dura mater* I opened on account of the state of

the parts beneath; he died, and I think it probable I killed him."

His practice was very adversely criticised and considered bad. The comment his annotator makes is that "surely nothing can be worse than to anticipate symptoms of compression by resorting to the trephine." Yet we know well that an indented inner table, even although it cause no symptoms at the time of injury, may give rise, as Hunter tells us, to severe cerebral disturbance in later life, and the surgeon who would not trephine in a case of punctured fracture of the skull, even in the absence of symptoms, would, I think, be held blameworthy. I doubt if our modern surgery, despite its knowledge of cerebral localisation, can proceed much further than Hunter was prepared to go.

Aneurism.

"Aneurism," Hunter says, "is a disease that must always kill if not attended to," and, had he done nothing else, his operation for the cure of popliteal aneurism would have been in itself a great achievement. He performed the operation five times, and, considering the circumstances, with marked success. He urges his views modestly, and what he writes affords insight into his character. For he tells

us, "I only give my own feelings. I go no further in theory than I would perform in practice. If patients be made acquainted with the consequences of the disease and would submit to, or rather desire, the operation, I would have it performed, as I should also have it performed on myself were I in the same situation. Yet I would wish every man to judge for himself, and not attempt an operation if he is fearful."

Nothing can better illustrate Hunter's method of applying his knowledge of physiology and pathology to surgery than this staying of the amputating-knife in the treatment of popliteal aneurism. We are all familiar with his crucial experiment, yet he himself had probably no immediate thought of its application to surgery in mind as he watched the growth of the stag's antlers in Richmond Park. He tells us that in July 1785 he had a buck thrown, and tied his carotid artery. Immediately the pulsation in the velvet ceased and the antler grew cold; but on returning a week or two later, he found warmth restored and the antler growing. The buck was then killed and sent to Leicester Square, and upon examination Hunter found the ligatured artery obliterated and the circulation carried on by other, generally small, vessels above and below the place of ligature, which had thus restored the blood current in the growing antler.

Nevertheless, he felt uncertain whether the same result would occur in man, and in December 1785 he carefully explained the alternatives to his first patient, a coachman, who was suffering from popliteal aneurism in St. George's Hospital. He told him of the usually fatal method of incision and evacuation of the sac, the better chance of life by amputation but with loss of limb, and, guided by his experience of the return of the circulation in the antler of the buck, he said he would try to save both his life and limb. The patient consented, the operation was performed, and six weeks afterwards he left the hospital cured of the aneurism, although he died fifteen months afterwards of another malady. Thus came about a total change in the treatment of aneurism, for, although Hunter had no opportunity of tying any artery but the femoral, he pointed out that his method was equally applicable to other vessels, a suggestion speedily realised by two of his pupils, Abernethy and Astley Cooper. Hunter was also aware that pressure upon the artery above the aneurism might effect a cure, and he indicated the flexion method of treatment, as well as the spontaneous cure of the disease, when he says, "the sac by its increase often presses on the sound part of the artery, and becomes the cause of its obliteration, as I have seen more than once."

The Hunterian operation for aneurism was at first but imperfectly carried out. A large portion of the vessel was exposed and four ligatures applied. The artery and vein were included together in the ligature on the first three occasions, without apparently ill result, and Hunter did not attach importance to taking up a nerve as well. However, in the fourth case the operation was performed much as we would do it now. The patient was a man of thirty-seven, who survived till he was eighty-six, and on his death the limb was dissected and the specimen preserved by Mr. Wormald for the Museum of the College, where it now is.

Venereal Diseases.

Upon none of his many works did Hunter bestow more care and labour than on that on "Venereal Diseases." He was hampered by the belief that gonorrhœa and syphilis were due to the same cause, an idea based on a painful though faulty experiment upon himself. Yet the number of true facts he made out is very marvellous notwithstanding. He observed that syphilis originated in man, and is not communicable to the lower animals, and he recognised the different modes of infection from venereal and non-venereal sources.

What is universally called the "Hunterian Chancre"

is thus described: "The surface of the prepuce or the angle between the prepuce and the glans is in some cases excoriated and afterwards ulcerated. In other cases a small pimple or abscess appears on the glans which forms an ulcer. A thickening of the part comes on which at first is very circumscribed, not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly. Its base is hard and its edges a little prominent." A description which leaves little to be desired in the way of precision and accuracy.

Hunter's observations in regard to gonorrhœa are clear-sighted and discriminating. He noticed that in the earlier stages of the malady the inflammation is restricted to the anterior portion of the urethra, and that epididymitis is a late symptom. He observed that in gonorrhœa the vas may become obliterated, which he says will have no bad consequences if only one testicle be affected, as the other will suffice for all purposes. He thus anticipates the observations of Gosselin and Curling on Aspermia from this cause.*

* In the *Archives Générales de Médécine* 1847 and 1853, Gosselin contributed several papers on "Obliteration des voies Spermatiques." In these he points out that the spermatic duct may become obliterated as the result of gonorrhœal epididymitis, that the obstruction may take place in the vas, the head of the epididymis, or in the seminiferous tubules. He states, erroneously however,

Hunter describes the various forms of stricture in a graphic manner, points out that the bulbous portion of the urethra is more liable to the disorder than the whole of the urethra besides, and that he never saw a stricture in the prostatic portion of the urethra. He tells us that it happens generally, if not always, that gleet is associated with stricture, and that this symptom often leads us to a knowledge of a stricture, or at least affords a suspicion of its presence.

In regard to treatment, he considers the cure of stricture can only be effected by local applications, and that mercury has been given erroneously and without success. A surgeon should in general first make himself acquainted with the situation of the stricture

that no previous author had noticed this fact, and that the condition was one hitherto undescribed, the probable explanation being that there is no apparent physiological change of function to attract notice during life, and that the cause of the aspermia could only be discovered by a minute anatomical examination after death.

He also shows that when both sides are affected the person must be sterile, as the absence of spermatozoa can be proved, although he will not be impotent.

Curling in his work on the "Diseases of the Testicle," refers to the occasional occurrence of obstruction in the tail of the epididymis. The inflammatory exudation, he says, in the walls and cavity of the ducts may cause their obliteration, generally in the *globus minor*, and when this is bilateral it will involve sterility. He quotes also from Gosselin's investigations in 1853, which he fully corroborates.

by an ordinary-sized bougie, and afterwards make use of a smaller one. Dilatation can be effected by the bougie, but it is seldom more than a temporary cure. There is always remaining the original tendency to contraction, and this recurs sooner or later.

His description of the use of bougies is full of practical interest; he mentions a new form as one of the greatest improvements in surgery, and can scarcely persuade himself that in using it he is treating the same disease. He says, "When I was attending the first hospitals in this city in the year 1750, the common bougies were either a piece of lead or a small wax candle, and although the present bougie was then known, yet due preference was not given to it nor its particular merit understood. A piece of the end of the leaden bougie sometimes broke off in the bladder and quicksilver was injected to dissolve it." There is in the Museum a series of bougies which belonged originally to John Abernethy.* They are doubtless quite similar and probably copies of those to which Hunter alludes.

His descriptions of the complications dependent on the presence of stricture are accurate and detailed. Extravasation of urine, perineal fistula, false passage, abscess in Cowper's glands, in the prostate, and peri-urethral abscess are fully described and dealt with.

* The Orator presented specimens of Hunter's form of bougie.

In treating of retention of urine, which he calls "suppression," he gives an account of tapping the bladder above the pubes, through the rectum, and by way of the perineum; he details the circumstances which, in his opinion, indicate the choice of method in a manner which could scarcely be improved in the pages of a modern text-book; and in describing perineal puncture of the bladder he goes very close indeed to the modern operations suggested by Sir John Simon and by Mr. Wheelhouse.

Inflammation.

Hunter dedicated his epoch-making treatise on the "Blood, Inflammation, and Gunshot Wounds" to the King, and it is in many respects his most important work. It was planned after the reduction of Belleisle, and the peace of 1763, upon the basis of notes and observations made during his eleven years' residence in London and on his experience of the inflammation that usually attended upon gunshot wounds.

In this work Hunter makes a bold attempt to formulate the laws which govern life, not only in healthy but also in diseased conditions. He recognises that the physiological state of the organism does not pass abruptly into that of disease, but by a gradual

transition. No previous physiologist had adopted similar views, and Hunter's clear insight into the processes at work in the animal body furnished a new departure in biological science, the value of his opinions being shown by the impression they produced upon every succeeding worker in the same field.

Not only are the thoughts new, but the language in which he formulates them had in many instances to be new also, and was often, as might be expected, difficult to understand. Life he believed to exist in every part of the animal body susceptible of impressions which excite action. There is no part, he remarks, that does not possess more or less of this vital influence, and the impressions thence arising produce infinite variety in all natural and diseased acts. "I cannot tell," he says, "how far each part might possess an equal quantity of life, but if we were to judge it by its power of action we should judge tolerably well. Disease would seem to give some intelligence with regard to this matter, but how far the resistance to disease and power of restoration depend on the power of life I cannot say. I believe it may be set down as a rule that those parts endowed with most action resist disease most strongly, and in disease restore themselves most readily to a healthy state." This law has exceptions, yet it certainly applies in a large degree to all pathological changes.

He regarded the blood as possessed of life like the more solid parts; that it formed the bond of union between the structures divided in a wound; and in what he calls "union by first intention" he recognised a process essentially different from that of inflammation. "In the adhesive inflammation," he observes, "the vessels, being enlarged, begin to separate from the mass (of the blood) some portion of the coagulating lymph with some serum and also red globules, throw it out on the surface and cover the sides (of the wound) with cells, which easily unite with the opposite ones with which they are in contact, forming the first progress of adhesion." He noticed the vessels passing into and ramifying in the new material so that the vessel was plainly continued from the old into the new tissue. He further adds that "in many bruises as well as in simple fractures, where the cavities are not exposed, the inflammation in most of these cases is capable of being resolved. In parts which have been divided and exposed, the inflammation is in a great measure controlled by bringing them together; or where parts are not brought together, nature attempts to prevent inflammation by covering the wound with blood and forming an eschar. The adhesive inflammation serves as a check to the suppuration by making parts which would otherwise

infallibly fall into that state previously unite in order to prevent its access."

The views and principles he thus formulated are in the main correct; they have served as a foundation for subsequent wide-reaching investigation, and form the basis of subcutaneous surgery and the treatment of wounds which, previously kept open, Hunter sought to close.

After describing what he terms "true suppuration," which he contends is the result of inflammation only, he goes on to speak of swellings without the usual symptoms of inflammation, often containing collections of matter resembling suppuration. He considers these collections to be scrofulous in nature, common in young subjects, rare in the full-grown or old, and he thinks their contents are erroneously called "purulent."

To this category he refers the slow swelling of joints and of lymphatic glands, the scrofulous enlargements and suppurations of the knee, the ankle, and the foot. He completely differentiates the breaking down of a tuberculous deposit from true suppuration occurring in the course of simple inflammation. He calls attention to what he terms the "curdly substance" in the fluid, distinguishing it from true pus. He tells us these collections move easily from their original seat to some other part by slight pressure or their own weight. The

migrating collection which descends from a carious vertebra to the groin he calls "an abscess in a part" in opposition to "an abscess of a part." Indeed, he gives the salient characters of these disorders with the keenest perception, and his descriptions suggest to me the masterly power of some great artist who with a few strokes of his pencil is able to indicate a powerful situation or suggest a startling action.

When we study Hunter's works we find many later views and advances foreshadowed. It is wonderful to reflect on how much he has seen and described, the correctness and depth of his observations, and his capacity to utilise the experimental method. There is scarcely any branch of anatomical or physiological inquiry he has not illumined, and few subjects in either medicine or surgery which have not benefited by his researches.

His remarks on the union of severed tendons were apparently suggested by the accidental rupture of one of his own, and prompted Delpech, many years afterwards (1816), to divide for the first time the Achilles tendon for pes equinus. This proved the foundation of orthopedic surgery developed by Stromeyer and others since his time.

"Of cancer," he reminds us, "no cure has yet been found, for what I call cure is an alteration of the dis-

position, and the effects of that disposition, and not the mere destruction of the cancerous parts." And to-day we can only, alas! endorse what Hunter said.

In that branch of surgery where we boast of our greatest and most recent advances, Hunter's originality is seen in the new paths of practice he indicated. He advises opening and washing out the abdomen in suppurative peritonitis, and points out how often adhesions form which prevent the otherwise fatal results of a perforated bowel. He writes that "tapping is but a palliative in ovarian dropsy. The tumour generally renders life disagreeable for a year or two, and then kills in the end. There is no reason why women should not bear spaying as well as other animals. It would be simply opening the cavity of the abdomen, which we often do without inconvenience." Nevertheless the establishment of ovariotomy as a successful surgical operation was postponed until the present generation.

Did time permit, or the occasion demand it, I might quote other examples of the wonderful foreknowledge of Hunter. From the high standpoint of his own learning he was able to grasp what was previously unknown, and to utilise his discoveries for the common good both of science and of mankind.

Gunshot Wounds.

John Hunter attached the greatest value to the experience he had gained while serving with the army. But little of real importance had been previously written on military surgery, and the practice pursued had hardly been reduced to the common rules of surgery. We know, too, from the records of the time what imperfect education and training were accepted from those seeking admission to the public service, and that it was almost unnecessary for a man to be a surgeon to practise in the army.*

Hunter writes: "A gunshot wound is often not understood at first. It may be impossible to tell

* Smollett entered the navy in 1739, when he obtained the post of surgeon on a King's ship. In "Roderick Random," which was published in 1748, he described the life and character of the naval surgeon of that time, and the life so described was a terrible one. Just one hundred years later, 1848, Huxley entered H.M.'s navy. He was assistant-surgeon to H.M.S. *Rattlesnake* during her cruises off the northern and eastern coasts of Australia, and the observations he then made formed material for his well-known work on "Oceanic Hydrozoa." John MacGillivray was naturalist to the expedition, Huxley being what would have been formerly called a surgeon's mate. The difference between Huxley and Smollett sufficiently emphasises the different condition of the public service at the present time and what obtained a hundred years ago, when "the captain of the ship," Smollett tells us, "was too much of a gentleman to know a surgeon's mate even by sight."

simply as wounds, for no wound, however small, should be enlarged unless something necessary is to be done which cannot be executed unless the wound be enlarged. This is common surgery and ought to be military surgery."

Here his rare intelligence ran counter to generally received opinions and to the practice strongly inculcated by his illustrious predecessors, Ambroise Paré, Richard Wiseman, and Baron Percy.

"It would be absurd, however," he continued, "for any one to suppose that there is never occasion to dilate gunshot wounds at all, but it is certain that there are very few in which it is necessary."

He tells us how seldom a wound need be dilated on account of the bullet itself; "balls, when obliged to be left, seldom do any harm when they are not in a vital part, and have been known to lie in the body for years, and yet the person has found no inconvenience."

There can be little doubt of the soundness of this doctrine, and it is certain that in many instances much greater injury has been inflicted in the unavailing search after the bullet, or even in its extraction, than the wound of itself could cause. Yet how persistently this superstition, I would call it, lingers in the public mind! The first anxiety of a man who has been shot, soldier and civilian alike, is that the

bullet, wherever lodged, should be forthwith extracted. The number and infinite variety of bullet-finders and bullet-extractors which have been invented show that the art of bullet-hunting has flourished in spite of all that Hunter urged against it. "If the wound will admit it, the finger," he says, "is the best instrument to make exploration with," an opinion I heartily endorse, especially since the risks formerly attending its introduction may now be removed.

What would Hunter think of our improved methods of diagnosis or the discovery by the new photography of the exact position, direction, and amount of comminution of a fracture, the locality of a foreign body, and the determination of the depth and relation to the surface of a lodged bullet, so that if, for any reason, it be deemed desirable to operate, it may be cut down upon with almost as much precision as if the tissues covering it were translucent?

"What," he inquires, "is the best practice when it is supposed the intestines may be wounded? I should suppose the very best practice is to be quiet and do nothing." How much, therefore, he would admire an exploratory operation for the discovery of a perforated intestine, the restoration of its continuity by one of the methods employed, the aseptic rendering of the abdominal cavity, and the frequent recovery of the

patient without reaction, pain, inflammation, or any sort of complication.

"Little notice," he tells us, "has been taken of wounds in the chest and lungs, because it was assumed nothing could be done for them." "Yet I have seen," he says, "several cases of gunshot injury where the patient got well after being shot quite through the lungs." And our recent military experience proves how right Hunter was, since many persons whose lungs have been traversed by modern projectiles not only recover, but seem scarcely to suffer inconvenience from the injury either at the time or afterwards.

Hunter differs, however, not only from those who preceded him, but from modern practice and opinion, in his advocacy of secondary in preference to primary amputation. He considers immediate amputation improper, as the surgeon cannot, under the circumstances, master the case adequately, and few amputations on the field of battle do well, "the only argument in their favour being that the wounded man is moved with greater ease without a limb than with a shattered one"; but I think it is now universally admitted that cases which demand amputation should be operated upon at the earliest period, either in the first dressing-station or the field hospital, and that a delay of twenty-four hours or longer very seriously increases the risks.

While, assuredly, Hunter was far in advance of his predecessors in the teaching and practice of military surgery, in some instances to such a degree that his views would hold good to-day, yet, the conditions of warfare have become so changed and gunshot wounds are so different, that the surgery of the battlefield no less than that of civil life has been revolutionised. Hunter clearly recognised that the destructive effect of a bullet on animal tissues depends on its velocity rather than on its weight. This is the characteristic by which the modern small-bore bullet, with its cupro-nickel or steel envelope, differs so greatly from the round bullet of Hunter's day, and on which those modifications of gunshot injuries which have taken place depend. The old round bullet produced at all ranges more severe wounds of the soft parts than the modern missile does, and at short ranges probably caused as extensive a fracture of a bone, but it so rapidly lost its energy that at distances of even a hundred yards it frequently flattened out against the shaft of a long bone without causing fracture. The modern bullet produces at almost all distances unimportant wounds of muscular tissue, but it is apt to cut pieces out of the large vessels, which render any hæmostatic process ineffective, and in consequence death from primary hæmorrhage on the battlefield will

be far more frequent than before. Injuries to the long bones by hard-mantled bullets produce, at ranges of over 2000 yards, tunnelling without any great fragmentation, while, as the range decreases, the extent of the fissuring, the number of the fragments, and the distance to which the latter are driven steadily increase, until at ranges under 300 yards the extensive damage and destruction on the exit side of the limb have all the appearance of being produced by a small-arm shell or explosive bullet.

Gunshot fractures of the shaft and of the articular ends of the long bones were considered to demand immediate amputation in Hunter's day, a rule which permitted but few exceptions for military surgeons of former times. In modern surgery the rule, if any, tends the other way, and only in exceptional cases—those in which the injury is not confined to the bone and unimportant soft parts, but in which the main vessels and nerves are also implicated—are more radical procedures to be recommended. In consequence of the suppuration which formerly always occurred in these cases, the comminuted and displaced pieces of bone, acting as foreign bodies, had to be thrown off by nature's efforts, and consolidation of a fracture was often long delayed or did not take place at all, while cases treated conservatively very frequently died of surgical infective

diseases. In recent campaigns gunshot fractures of the long bones, even when greatly comminuted, and penetrating injuries of joints, have been treated by conservative methods with success, except in cases where the blood and nerve supplies of the limb below are cut off by laceration of the main trunks. Amputation is only resorted to when no other resource remains to the surgeon, and, occasionally, perhaps, when military exigencies necessitate the immediate transference of the wounded to the base of operations, circumstances which render conservative treatment, at all events for injuries of the lower limb, either impossible, or, at least, more dangerous than operation. No doubt some small percentage of cases of gunshot injury of long bones and of large joints did formerly recover without amputation; but it has only been since Listerian methods of treatment have been perfected that conservative treatment in time of war, on a large scale, and as a rule, has become possible to the military surgeon.

Hunter was the great military surgeon of his time, as may be seen both by his teaching and in his writings, and our opinion of his greatness must be enhanced when we remember the scanty means at his disposal for bringing his surgery to a successful issue.

The Hunterian Museum.

In 1799, six years after Hunter's death, Parliament purchased his collection and subsequently handed it over in trust to the Royal College of Surgeons for the public advantage. Further grants of money were voted to the College to erect a proper building for preserving and extending "Master" Hunter's collection, and to build a theatre for the delivery of public lectures on anatomy and surgery.

The Museum has been aptly called Hunter's chiefest monument, and is surely sufficient for the fame of any man. He worked for it constantly, sacrificed to it his other occupations, and devoted all his earnings to its development. His aim was no less than to illustrate the whole question of life both in health and in disease. Nature's handiwork in all its manifold perfections is there clearly shown forth by the never-ceasing labour of this great intellect. Any ambiguity that may sometimes mar his written words is not to be found in the careful arrangement of specimens which Hunter has displayed to us. The exposition is one almost too great for the human mind to grasp, much more for one man in any adequate sense to realise. Yet Hunter did in the main compass his splendid aspirations.

He laid all his friends under contribution. Sir Joseph Banks procured for him every strange creature he could lay hands upon, and divided with him the collection he had made during his travels round the world. Indeed for long Hunter had the refusal of every curious animal imported into the country. Smollett, a great friend of Hunter's, illustrates the public view when he writes to him, "I mean to send you my poor carcase in a box, to be placed amongst your rarities." Hunter's letters to his friends are full of urgent appeals to send him everything which he could utilise for his purposes. His later letters are, if possible, more importunate than the earlier ones. He expresses regret to a correspondent at the loss on the way home of two Havannah birds and a collection of insects. He much wishes for information on the natural history of the swallow, whose habits he remembered in Portugal. He wants ostrich eggs just about to hatch, and directs them to be put into proof spirit after cracking the shell. "If a foal camel was put in a tub of spirits and sent, I should be glad. Is it possible to get a young tame lion, or, indeed, any other beast or bird? If chameleons were sent it should be in the spring. I want everything respecting the bee tribe, such as wasps with their nests, also hornets with theirs." What a number of

demands, and in one letter out of many similar ones, and what an illustration of his zeal in the acquisition of knowledge!

The Hunterian collection of comparative anatomy cannot fail to excite surprise and admiration. We find in it a display of the various structures by which the physiological processes in plants and animals are carried on, commencing with the lowest forms and ending with man himself. The anatomical preparations are arranged according to the subjects they are designed to illustrate, and there are besides preparations of healthy and diseased conditions in plants, a series of skulls, skeletons of almost every known form of animal, many examples of deviations from normal types (which Hunter showed to be nothing essentially apart from natural development, but aberrations due to excess or defect, or by reason of arrest in the ordinary process of growth), and also a considerable number of Fossils. Hunter's collection numbered nearly 14,000 specimens with ten volumes of manuscript description and notes, beside other catalogues and numerous drawings. He dissected more than 500 different species of animals, many of them more than once, and has left records of 315 dissections. What man ever accomplished such a prodigy of labour, or ever before illustrated his inquiries on so gigantic a scale? He proves that

during the development of the higher organisms the parts usually undergo progressive changes from simple to more complicated structure, and that the transitional form can often be recognised as a permanent condition met with in some, so called, inferior form of life. The wide-reaching effect of these principles of Hunter finds its further development in the works of Darwin and other philosophers who have followed in his footsteps but have not departed from his methods.

Since Hunter's time the number of preparations has increased to almost 50,000 specimens. His threescore of skulls have now grown to nearly four thousand, illustrating many difficult problems in ethnology. The pathological collection is five times as numerous, and in all the departments there has been a continuous increase.

Hunter's legacy to the world of wisdom and knowledge was great, but the example furnished to us by his indomitable industry and clear recognition of the importance of an extensive knowledge of nature in order to rightly interpret its problems is even of greater value. Our College has proved the wise custodian of this great Institution, and many of its most illustrious sons have devotedly worked towards its completion and perfection. Nowhere in the world exists its like.

It is one of our national glories, and it is a glory for our profession.*

Conclusion.

Hunter was a profound philosopher, a great naturalist (using the term in its widest sense), a pre-eminent collector, and the foremost surgeon of his time. It was to make surgery more perfect that all his work

* From Mr. Stewart, the Conservator, I learn that the number of Hunterian specimens now in the museum is 11,324, and the additions since made amount to 37,802, or 49,126 in all. The numbers in the different groups are:

	Hunterian.	Additions.	Total.
Physiology: plants and animals, arranged according to function	3,751	3,186	6,937
Human osteology: skulls, skeletons	106	6,582	6,688
Comparative osteology	3,802	13,560	17,362
Plants: invertebrata, external forms	1,129	2,468	3,597
Pathology: human and comparative	2,092	8,207	10,299
Calculi	441	2,575	3,016
Instruments	3	916	919
Human normal anatomy		308	308
Totals	11,324	37,802	49,126

There were but 2 Hunterian articulated skeletons, 44 skulls, and

subserved, and in it he reached the highest rank. He rendered to his art and science greater service than any man had done before him, and his claim to our admiration rests not merely on what he did, but on what he suggested might be done.

On the brass sacred to his memory in Westminster Abbey this College calls him the founder of scientific surgery. His claim to this proud title was asserted in the first of the Hunterian Orations; it has been renewed in every successive oration where Hunter's life and labours are reviewed by the most eminent of our profession, and it has never been called in question.

One cannot but feel impressed at the multitude of the subjects which engaged Hunter's interest and

6 skeletons of fœtus. To these have been added by the College 57 articulated skeletons and 3770 skulls.

There is proof that Hunter dissected at least 500 different species of animals, not including repeated dissections of different varieties of the same animal and numerous dissections of plants. He made preparations so as to display the distinctive characters of each animal, and had careful drawings taken from recent dissections besides. He left at his death an enormous mass of manuscript notes, including nine folio volumes of descriptions of dissections of animals, one volume of the natural history of vegetables, notes upon fossils, the notes he compiled for his Croonian Lectures, besides a very large number of observations concerning anatomy and physiology, the experiments he had made, on surgery generally, and also many notes of surgical cases. These were destroyed by Sir Everard Home, a very holocaust.

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attention, the greatness of his achievements, and the far-reaching influence of so many of his inquiries. His spirit survives in the energy of others who follow in his footsteps, and serves to stimulate every student of natural science. He possessed that high form of intelligence which can convert abstract scientific truth to practical uses; hence it is that, finding surgery scarcely more than a mechanical art, he transformed it into a scientific calling, based upon principles which rest on the solid foundations of biological knowledge and collateral science. His supreme endeavour was to study life in all its many-sided manifestations. This is the noblest form of study, and the most inexhaustible, for the problem of life will remain a mystery transcending the power of human investigation or human imagination.

Billroth regarded Hunter as one of the greatest men the English nation has produced, and that his work on Inflammation and Gunshot Wounds is the cornerstone of modern English and German surgery. "From Hunter's time to the present day," he says, "English surgery has had about it something noble, and nowhere, either in ancient or modern times, can the pattern be found of a grander scientific career."

Masters of our craft at epochs in surgical history have from time to time declared their art to be

then so near perfection that further improvement was impossible. May we not, nevertheless, hope and expect that surgery will accomplish new triumphs and yet greater completeness? I am not of those who think there can be any finality in human progress; to believe so would, I consider, render life no longer worth living in its higher sense and greater aspirations. Rather let us consider ourselves as having but just crossed the threshold of the great temple of science, knowing only a small part of that which still remains to be known, and be mindful of Bacon's words:

"Let no man upon a weak conceit of sobriety, or an ill-applied moderation, think or maintaine, that a man can search too farre or be too well studied in the booke of Gods word, or in the booke of Gods workes, but rather let men awake and cheerefully endeavour and pursue an endlesse progresse or proficiency in both."

Much as we have already achieved in every branch both of the science and art of our profession, more especially during the latter half of this century, now drawing to a close, our past experience tends to show that in the future likewise great things shall come to pass. In our own lifetime surgery has been wholly changed. The discovery of Anæsthesia has lifted a weight of sorrow from the world, and, as Oliver Wendell

Holmes, both poet and physician, has expressed it, "The fierce extremity of suffering has been steeped in the waters of forgetfulness, and the deepest furrow in the knotted brow of agony has been smoothed for ever."*

Anæsthesia has, besides, rendered surgical procedures capable of a realisation which we could never previously have supposed possible. It has permitted many new departures in surgery, made many operations feasible which had before been condemned, and has proved a help of extreme value in the diagnosis of disease.

Furthermore, one of the scientific descendants of Hunter, deeply imbued with his spirit, transcendently patient and painstaking in detail as was his master, as

* "In this very hour, while I am speaking, how many human creatures are cheated of pangs which seemed inevitable as the common doom of mortality, and lulled by the strange magic of the enchanted goblet, held for a moment to their lips, into a repose which has something of ecstasy in its dreaming slumbers? The knife is searching for disease, the pulleys are dragging back dislocated limbs, nature herself is working out the primal curse which doomed the tenderest of her creatures to the sharpest of trials, but the fierce extremity of suffering has been steeped in the waters of forgetfulness, and the deepest furrow in the knotted brow of agony has been smoothed for ever."—*Introductory Lecture, by Oliver Wendell Holmes, delivered in the Massachusetts Medical College, November* 3, 1847.

minute an observer of nature's ways, and as careful an experimenter, after much trying and much thinking, has realised, in the discovery of the methods of antiseptic surgery, a benefit to mankind which only surgeons can to the full appreciate. What was hazardous before is now rendered safe, what was accomplished with pain and suffering is now free from both. There is scarcely a limit to what might be said in praise of this great work. The name of Lister, like that of John Hunter, will stand forth in the records of scientific progress as one who has immeasurably benefited humanity, and as the author of the means whereby surgery has been mainly enabled to make that marvellous progress of which we are all so proud. This is recognised throughout the world, and were I not convinced that our science has fresh achievements in store, I should say that Lister had finally crowned the edifice whose corner-stone John Hunter laid.

YOUR ROYAL HIGHNESS,

MY LORDS AND GENTLEMEN,

John Hunter's career has been presented to audiences in this Theatre from almost every aspect, and his life and work have been reviewed by the greatest of his successors, some of whom have compelled our

admiration by their eloquence and the beauty of the language in which they have expressed their thoughts. I do not expect to equal these, yet I would hope that my story, although a "twice-told tale," has aroused in you some measure of sympathetic response. The study of Hunter's works is in itself a liberal education, and all who love their profession, and have its well-being at heart, will do well to study them. They show his almost superhuman energy, the versatility of his genius, his extraordinary powers of observation, and beyond all these the absolute mastery of his will over bodily suffering. Of all the great minds which have illuminated the scientific world and guided its destinies, John Hunter's is the one which first directed surgery into the pathways of science, and dying left to surgeons a future in the memory of his past.

He is the one great man without whose aid it is impossible to imagine surgery all that it now is; we cannot take his influence away and yet retain all that we now possess. Our science might have spared some other workers, but it could not have become the science we know without John Hunter.

This great surgeon, one of the greatest men who ever practised surgery, has now long gone to his rest. Cut off in the midst of his glory he died in harness.

Yet, though he be gone, we may well apply to John Hunter what has been said of a very great statesman lately passed away: "The nation lives that has produced him, may yet produce others like him, and in the meantime it is rich in his memory, rich in his life, and rich above all in his animating and inspiring example."

Obituary Notices.

According to the terms of the deed already mentioned, which establishes the Hunterian Oration, it is part of my duty to add some appreciative words in memory of those colleagues whose labours have contributed to the improvement or extension of Chirurgical Science, and who have died since my predecessor spoke in this place.

Oliver Pemberton.

The first of these is Mr. Oliver Pemberton, Surgeon to the Queen's Hospital in Birmingham, Bradshaw Lecturer in 1894, and Member of the Council, who died on the 7th of March 1897, at the age of seventy-one. His strongly marked individuality and wise judgments, given always in a kindly and considerate manner, have been much missed.

He was educated at King Edward's School in Birmingham. Subsequently he entered St. Bartholomew's Hospital and formed fast friendships with many of the distinguished men belonging to that great institution. It was altogether delightful to listen to the affectionate banter which passed between him and his intimate friend and fellow-student, Sir William Savory.

Pemberton made valuable contributions to surgical literature, was a man of culture, an able clinical teacher, possessed of clear common sense, an acute judgment, and admirable temper. He spoke ill of no man, and certainly none could speak ill of him.

James Blake Bailey.

Much too early, and to the great loss of this College, Mr. Bailey, its librarian, died April 14, 1897, at the age of forty-eight.

Although not a medical man, he possessed an intimate acquaintance with medical literature, both English and foreign, and a wise critical and literary discernment. He had a knowledge of the contents of our great library at his finger-ends, and took a keen and active interest in collecting everything bearing on the life and work of Hunter. Every one who frequents our library must gratefully remember Mr. Bailey's helpfulness, his

accuracy, his never-failing genial courtesy, and recall his bright intelligence and manifest sympathy with those who sought his assistance. Mr. Bailey took a real pride in our library, which at present contains some 60,000 volumes, and is increasing at the rate of about a thousand volumes each year. We owe it to him that the library has become a perfect model of good arrangement; the books can be consulted with facility, and the readers have increased enormously. Mr. Bailey received his early training in the Radcliffe Library at Oxford University, and whilst he was with us he had the energy and ability to keep his terms at Oxford and take an Arts degree. He took a great interest in the byeways of literature, and wrote the "Diary of a Resurrectionist," which gives a graphic account of the scandals prevailing before the passing of the Anatomy Act.

Walter Rivington.

Mr. Rivington died May 9, 1897, at the age of sixty, whilst still a Member of the Council. He was Surgeon to the London Hospital and a man of considerable literary attainments. He wrote an exhaustive history of the medical profession. He was a brilliant anatomist and good surgeon, and his work was accurate

and painstaking, as is especially manifest in two of his surgical essays, "Tumours of the Orbit" and "Rupture of the Urinary Bladder." He entered the Council as a reformer, and had a strong wish to make radical changes in the constitution of the College. He stated his views in debate with courage and discretion also, and although few endorsed his opinions, it was apparent they were the result of conviction, and urged from a sense of public duty.

Edward Lund.

Mr. Lund, who died on February 4, 1898, was a provincial surgeon of the best type, and a man whose presence at our Council meetings was always welcome. He was an Examiner for many years, and a Hunterian Professor.

As Surgeon to the Manchester Royal Infirmary, in succession to men like Thomas, Turner, and Southam, he worthily maintained the reputation of the Medical School. He was largely instrumental in uniting it to Owens College, whence has eventually arisen the Victoria University. Mr. Lund published many contributions on surgical subjects, one especially good on "Internal Urethrotomy." He had great gifts as a teacher, was resourceful and ingenious as a surgeon, and thorough in everything he did.

Henry Lee.

Mr. Lee, once a Member of the Council, Hunterian Lecturer, and Surgeon to St. George's Hospital, died the 11th June 1898, at the advanced age of eighty-one. He early devoted his attention to pathology, especially to that of the veins. Afterwards he attached himself to the study of syphilis, and did much for its better treatment, and in this branch of knowledge he was an unquestioned authority. He was a good practical surgeon, an able clinical teacher, and most genial in his intercourse with men.

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